

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 8 July 2004 (08.07.2004)

PCT

(10) International Publication Number WO 2004/057041 A1

(51) International Patent Classification⁷: 15/00, B01J 8/18, F27B 15/02

C22B 1/10,

(21) International Application Number:

PCT/EP2003/013984

(22) International Filing Date:

10 December 2003 (10.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 102 60 735.4 23 December 2002 (23.12.2002) DE

(71) Applicant (for all designated States except US): OUT-OKUMPU OYJ [FI/FI]; Riihitontuntie 7, FIN-02200 Espoo (FI).

(72) Inventors; and

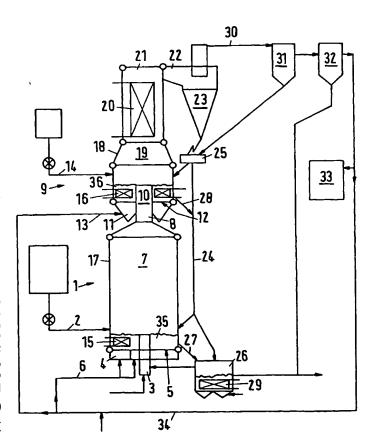
(75) Inventors/Applicants (for US only): STRÖDER,

Michael [DE/DE]; Dürerstrasse 77, 61267 Neu-Anspach (DE). ANASTASIJEVIC, Nikola [DE/DE]; Zum Niddersteg 11, 63674 Altenstadt (DE). RUNKEL, Marcus [DE/DE]; Schmiedgasse 1, 55288 Partenheim (DE).

- (74) Agent: KEIL & SCHAAFHAUSEN; Cronstettenstrasse 66, 60322 Frankfurt am Main (DE).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,

[Continued on next page]

(54) Title: METHOD AND PLANT FOR THE HEAT TREATMENT OF SULFIDIC ORES USING ANNULAR FLUIDIZED



(57) Abstract: The invention relates to a method and a plant for the heat treatment of sulfidic ores, in which solids are heated to a temperature of approximately 450 to 1500 °C in a fluidized bed reactor (1). In order to improve the energy utilization, it is proposed to introduce a first gas or gas mixture from below through a gas supply tube (3) into a mixing chamber (7) of the reactor (1), the gas supply tube (3) being at least partly surrounded by a stationary annular fluidized bed (35) which is fluidized by supplying fluidizing gas. The gas velocities of the first gas or gas mixture as well as of the fluidizing gas for the annular fluidized bed (35) are adjusted such that the particle Froude numbers in the gas supply tube (3) are between 1 and 100, in the annular fluidized bed (35) between 0.02 and 2 and in the mixing chamber (7) between 0.3 and 30.